STUDIES REGARDING THE DYNAMICS OF ENVIRONMENTAL INDICATORS IN AGRICULTURE IN SOUTH-WEST OLTENIA REGION

CERCETARI PRIVIND DINAMICA INDICATORILOR DE MEDIU IN AGRICULTURA IN REGIUNEA SUD-VEST OLTENIA

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Abstract: *Romanian agriculture remains a subsistence agriculture, structural problems of its are difficult to solve.The fact that soils are in a process of continuous degradation in South-West Oltenia and all over Romania makes the problem of land upgrades to be particularly acute because the land is affected by several limiting factors of productive capacity (frequent droughts, erosion soil water, excess water frequently in soil compaction due to improperly performed work.*

Key words*: agri-environment, crops, irrigations, fertilizers*

INTRODUCTION

South-West is a development region of Romania, founded in 1998. Like other developing regions, has no administrative powers, its main functions are the coordination of regional development projects and absorption of EU funds. South-Western Development Region was made up of five counties: Dolj, Gorj, Mehedinti, Olt and Valcea. It is sometimes called South-West Region Oltenia development because it is made in the 82.4% of the historical region of Oltenia. South-Western Development Region Oltenia is located in the south - western Romania (where it gets its name), representing 12.25% of the country.

MATERIALS AND METHODS

Below are presented and analyzed a series of specific indicators of agri-environmental indicators by extracting data from the Romanian Statistical Yearbook and processing to determine the evolution and dynamics according to the reference year.

RESULTS AND DISCUTIONS

Agri-environmental indicators. Land improvement status is far from satisfactory, some of them are not functional from the absence of mining equipment, lack of maintenance of the component pieces, lack of maintenance and operation funds, therefore it is necessary the rehabilitation and modernization of land improvement works .For areas developed for irrigation situation is almost the same in 2010 compared to 2000, showing the weak development of these works being felt even a small decrease in the surface.

Table 1.

The area of land equipped with irrigation works during 2000-2010

	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Total surface	100	100	100	100	100	99.99	99.99	99.99	99.99	99.99	99.99

Source: Calculations based on data from Statistical Yearbook of Romania 2001-2010

In respect of drainage works in South-West region, the datas reflect a trend showing small changes in this period, largely maintaining its value since 2000.

Table 2.

The area of land equipped with drainage works in the SW region during 2000-2010

	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Total area equipped	**284493**	**284493**	**284493**	**284530**	**284833**	**284833**	**284833**	**284833**	**284833**	**284493**	**284493**
Agricultural area	**256659**	**256659**	**254739**	**254775**	**255071**	**255071**	**255071**	**255064**	**255064**	**256659**	**256659**
Arable land	**233352**	**233352**	**231432**	**231468**	**231764**	**231764**	**231764**	**231757**	**231757**	**233352**	**233352**
Natural pastures	**14855**	**14855**	**14855**	**14855**	**14855**	**14855**	**14855**	**14855**	**14855**	**14855**	**14855**
Natural meadows	**1819**	**1819**	**1819**	**1819**	**1819**	**1819**	**1819**	**1819**	**1819**	**1819**	**1819**
Vineyards, viticulture nurseries	**3561**	**3561**	**3561**	**3561**	**3561**	**3561**	**3561**	**3561**	**3561**	**3561**	**3561**
Orchards, nurseries, fruit trees	**3072**	**3072**	**3072**	**3072**	**3072**	**3072**	**3072**	**3072**	**3072**	**3072**	**3072**

Source: Calculations based on data from Statistical Yearbook of Romania 2001-2010

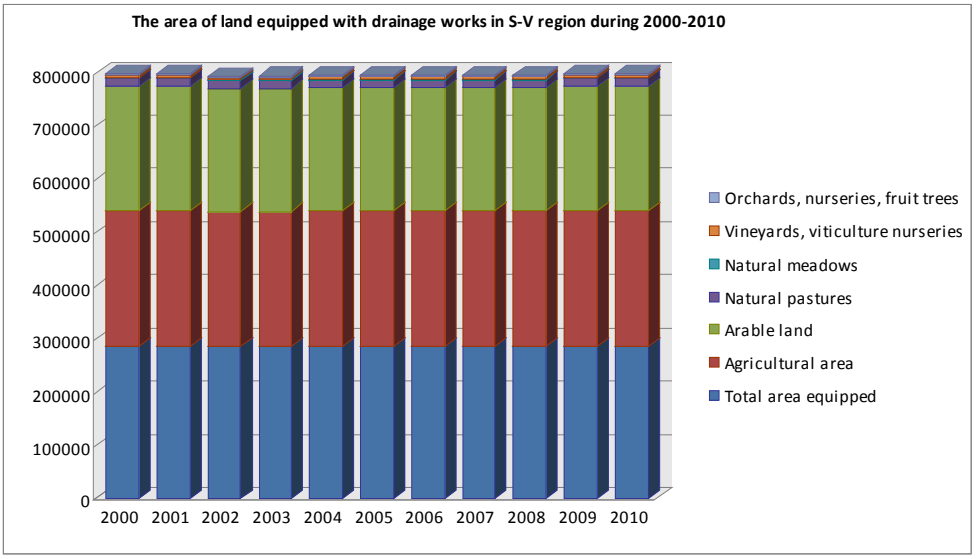


Figure 1

Although we see slight increase in total fertilizer consumption, this consumption remains low compared to surface, influencing productions obtained and yields per hectare.Therefore in the period 2003-2010 increased the use of fertilizers with the peak value in 2005 where they reached 75% compared to 2000 (although it was down until 2003). Decreases the use of phosphatic fertilizers by approximately 50% and increases the use of potassium and nitrogenous. As regards of natural fertilizers their use decreases until 2010 by around 45%.

Table 3
The evolution of dynamics of fertilizers given to the country and in the South West region during 2000-2010

	Types of fertilizers	Region	2000	2002	2004	2006	2008	2010
Total	Chemicals	TOTAL	100	95.3	111.1	106.1	116.3	140.5
		S-V	100	75.0	106.9	105.7	86.9	75.5
	Nitrogenous	TOTAL	100	99.9	112.9	105.4	117.0	127.8
		S-V	100	83.5	119.2	110.6	89.0	85.2
	Phosphate	TOTAL	100	82.7	106.6	106.4	116.0	139.7
		S-V	100	45.0	67.9	94.6	84.0	40.2
	Potassic	TOTAL	100	96.0	108.0	115.0	107.0	351.9
		S-V	100	55.8	37.1	28.4	30.5	69.6
	Natural	TOTAL	100	99.6	112.2	94.2	74.3	96.3
		S-V	100	75.7	102.8	77.9	75.6	55.0

Private property	Chemicals	TOTAL	100	107.2	128.5	122.2	135.2	163.5
		S-V	100	81.0	119.2	116.2	97.7	83.5
	Nitrogenous	TOTAL	100	111.7	129.7	120.7	135.1	147.4
		S-V	100	88.3	129.4	119.2	97.4	91.3
	Phosphate	TOTAL	100	94.6	125.8	124.5	137.2	165.8
		S-V	100	47.8	77.5	104.6	98.3	47.0
	Potassic	TOTAL	100	108.1	125.8	132.9	125.0	414.9
		S-V	100	257.9	179.0	97.1	125.4	320.6
	Natural	TOTAL	100	100.7	113.4	95.6	75.7	98.1
		S-V	100	76.4	103.5	78.8	76.4	55.4

Source: Calculations based on data from Statistical Yearbook of Romania 2001-2010

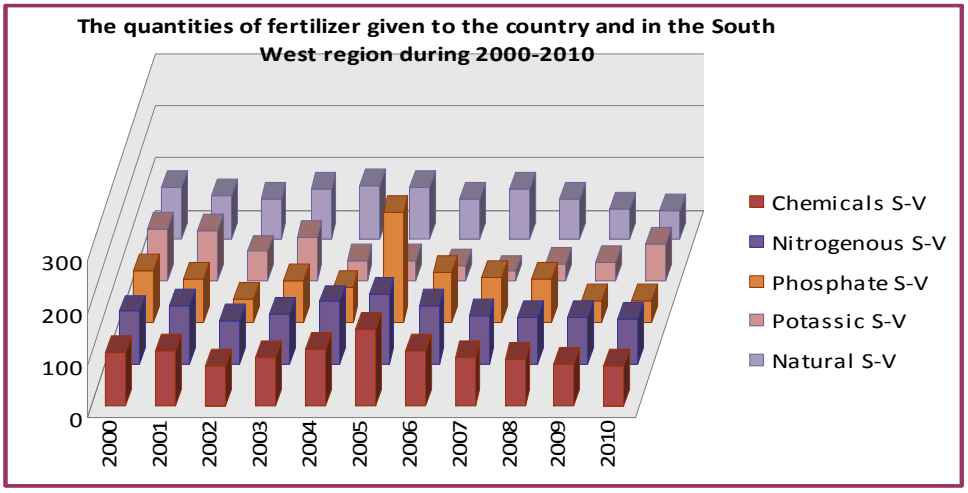


Figure 2

It is to report that the moderate use of fertilizers facilitates the conversion of land to organic farmland those who opt for this type of agriculture.

Table 4

The dynamics of surface on which pesticides were used during 2000-2010 in the South-West

Property form	Types of pesticides	Area	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total	Insecticides	TOTAL	100	103.3	95.7	95.2	94.9	144.6	104.6	134.3	130.1	149.1	167.9
			100	80.2	64.1	58.1	68.8	184.0	161.4	154.6	174.7	125.9	113.6
	Fungicides	TOTAL	100	113.9	100.1	90.8	98.2	122.0	116.5	131.1	133.8	185.5	172.0
			100	101.3	72.6	67.6	92.4	161.5	117.6	105.1	119.5	121.9	235.4
	Herbicides	TOTAL	100	118.3	108.7	103.9	114.0	135.7	132.7	133.5	142.6	141.5	153.9
			100	121.4	95.1	103.1	123.1	181.4	149.4	144.1	187.5	200.1	216.7
Private property	Insecticides	TOTAL	100	115.8	120.0	124.3	125.6	187.9	134.4	180.3	175.1	201.5	226.4
		S-W	100	110.9	93.0	94.0	110.5	310.5	271.2	261.3	299.0	212.0	192.3
	Fungicides	TOTAL	100	124.5	122.4	116.3	127.4	154.0	147.5	173.3	176.8	247.6	227.4
		S-W	100	106.6	78.5	80.8	110.8	195.9	140.2	130.4	148.1	149.3	290.9
	Herbicides	TOTAL	100	131.2	136.9	135.2	151.0	174.4	175.8	177.6	191.0	189.6	206.4
		S-W	100	133.3	109.5	130.7	157.2	234.3	192.0	186.8	249.0	263.6	283.0

Source: Calculations based on data from Statistical Yearbook of Romania 2001-2010

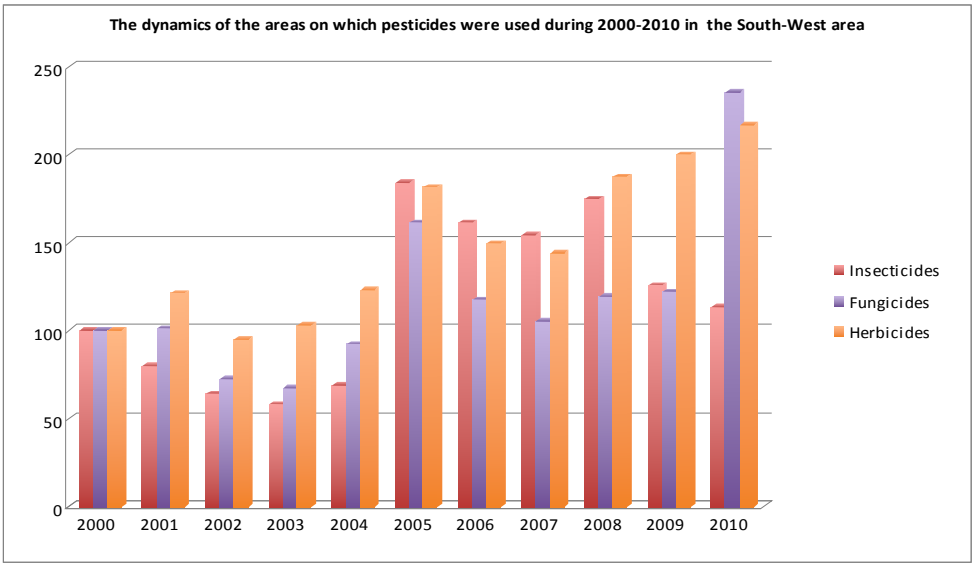


Figure 3

The use of pesticides has increased in the period 2000-2010 reaching at the end of to the year at insecticides a percent of 67.85 per total country and in South-west 13.63% compared to 2000 and at the fungicides and herbicides almost the double quantity.Inappropriate use of pesticides and fertilizers result negative effects on quality, also affecting soil quality, water, flora, fauna, etc..

CONCLUSIONS

In the South-West Oltenia agriculture is an important resource, but the sector's productivity is lower the productivity recorded in EU countries due to insufficient technical equipment, irrigation systems are underdeveloped.In conclusion, agriculture is not adapted to the specific regional planning and financial crisis does not contribute to its development. The structure highly fragmented of agricultural surface is an obstacle in attracting new investment and low investment rates have increased vulnerability of Romanian agriculture to weather conditions and induced to this sector a very volatile behavior.In front of these problems faced by agriculture in South-West should be taken into consideration the economic effects caused by land improvement, namely:

- through application only of irrigation, crop yields increase in average by 30-50% and by applying irrigation simultaneously with other agrotechnical

measures, agricultural production is doubled, leading to increased income in agriculture and thereby the prosperity of farmers;

-through arrangements of impoundments, drainage and soil erosion, are rendered back to the agricultural circuit large areas of land, the direct effect being the increased arable land;

- the growth of agricultural production creates the potential transition from being a subsistence agriculture at the market stage, through surplus of products;

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